Burden of non-communicable diseases in South Asia: Evidence for epidemic of coronary heart disease in India is weak

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Health in South Asia

Future of Kerala depends on its willingness to learn from past
Editor—The Kerala model in health, cited by Bhutta et al in the theme issue on health in South Asia as replicable for South Asian countries,1 is facing serious threats. The state has a triple burden of communicable, non-communicable, and traumatic diseases.

Stupendous growth of the private sector has resulted in skyrocketing healthcare costs. Lured by the hi tech sophistication of the private sector, people are abandoning basic principles of primary health care. Even poor people prefer private hospitals, and a major reason for sustaining poverty is healthcare cost.2

The government is reducing its investments in health and education due to fiscal crises and pressure from funding and lending agencies. The opening up of the medical education sector to private entrepreneurs, lack of guidelines for the private practice of government doctors, and shortage of doctors for rural areas are all disturbing developments. Transfer of healthcare institutions under local self-governments is yet to show the desired benefits.

The state is developing a long term plan, “Health Vision Kerala 2025,” and a health policy. To equip the primary healthcare workforce to face the emerging challenges,3 job responsibilities were redefined recently.

Factors that determined the successful Kerala model, among others, include historically prevalent social justice, commitment of governments to health and education, land reforms, an organised public distribution system, streamlined primary health care, and an organised labour sector. Deterioration in these determinants is likely to have strong negative impact. Kerala should learn from its past to avoid the sad plight of some other Indian states.

Sri Lanka needs to build on its strengths and gains
Editor—Bhutta et al and the World Bank highlight Sri Lanka as a model in achieving exceptional health status with comparatively low investments.4 However, recent data show a stagnation of gains (such as an increase in infant mortality from 15.9/1000 in 1999 to 17/1000 in 2001) and emerging challenges.5 6

This requires the model to be suitably modified to lower the preventable morbidity and mortality, while responding to the emerging challenges. The following examples show that Sri Lanka is deviating in an ad hoc manner from the successful model of preventive programmes at a relatively equitable grassroots level.

The preventive sector is progressively underfunded, rather than strengthened to meet the epidemic of non-communicable diseases. From 1993 to 1999 expenditure on preventive and public health declined from 10% (of total health expenditures) to 6%, and expenditure dedicated to the curative sector has been maintained around 44% to 47%.7

Human resource development is heavily biased towards medical officers in the curative sector rather than staff in the preventive sector, personnel, and support functions. From 1996 to 2001 the proportion of medical officers in the curative sector increased by 71% compared with a 33% increase in medical officers working in the community and a 63% increase in family health workers.8

Sri Lanka therefore requires urgent corrective action to build on its strengths and gains. Otherwise it may end up as an example of a country that dismantled its own pioneering model in an ad hoc manner.

Competing interests: None declared.

Research cannot be funded when health itself has low priority
Editor—In the theme issue on health in South Asia Sadana et al analysed the lack of health research in South Asian countries.

Health is given the least priority in annual budgets. In a country such as India, which has a population of over 1 billion, the health budget is less than 2% of the total budget. This obviously affects the delivery of primary care, so where would be the funding for research?

The health system in South Asian countries is run mainly by the private sector. The private sector is driven by economics, so funds for research are again low. Vast numbers of patients go through the private health sector. Only proper collection of data would provide the clinical data that could then be used to devise protocols for managing different illnesses. Thus in the long run a healthier population would result. This would also decrease the burden on the health system of these countries.

Ali Aagar and Behranwala

Sri Lanka’s publications on health research are negligible compared with other South Asian countries. The country has a population of over 100 million and a budget is less than 2% of the total budget. The human resource development is heavily biased towards medical officers in the curative sector rather than staff in the preventive sector, personnel, and support functions. From 1996 to 2001 the proportion of medical officers in the curative sector increased by 71% compared with a 33% increase in medical officers working in the community and a 63% increase in family health workers.1

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Competing interests: None declared.


4 Editor—In the theme issue on health in South Asia Moazzem et al criticise the promotion in developing countries of a Western style of health services based on personalised curative treatment administered by doctors and hospitals regardless of the entirely different disease pattern and socioeconomic conditions of most people.1 On these grounds they call for national community health worker programmes.

We contend that personalised curative care is pivotal because diseases generally require clinical skills for control, and

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We contend that personalised curative care is pivotal because diseases generally require clinical skills for control, and

Competing interests: None declared.
Patients demand alleviation of avoidable death, suffering, and anxiety related to illness. Committed community health workers may sometimes be a useful link between communities and professional services. But in Africa, they were unable to substitute for professionals in delivering first line health care—unlike medical assistants, who with a few years' training may replace doctors in deprived areas. They generally offered solutions to problems for which communities already had an answer—for example, drugs available on markets. Community health workers could not deal with many disease control interventions together (mass drugs administration, surveillance, health education, water and sanitation, and vector control).

We challenge the link made by the authors between reduction in infant mortality and the activities of community health workers. This indicator is sensitive to numerous social and economic factors. It decreased from 1970 to 2000 in all developing countries, with or without community health workers.

Community participation is pivotal in collaboratively managing publicly oriented health facilities, which are badly needed for disease control and patient centred care. Participation can enhance their responsiveness and utilisation rates. With adequate funding and managerial contracts, governments and international aid could promote such democratisation and quality health care.

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Competing interests: None declared.

Impact of religion was not considered

Editor—Subramaniam et al have confirmed in their study what we in the field have suspected for a long time: tobacco consumption in the South Asian communities based in the United Kingdom reflects what is happening in their countries of origin.

Smoking and tobacco chewing is still a matter of health inequalities, and the strategy adopted by the UK Department of Health in tackling health inequalities has raised the profile of smoking cessation in addressing these health inequalities in the South Asian communities. South Asian communities have the highest smoking rates.

However, what Subramaniam et al have not looked at closely is the issue around religion and tobacco use. In 2001 the UK census was the first one of its kind to ask about religion. We now find that Sikh Punjabis who had been included within the Indian category have the lowest tobacco consumption rates both in the United Kingdom and in India on account of a decree set in 1998, banning tobacco use through a baptism ceremony called the Amrit ceremony. On 13 April 2001 some one million Sikhs refreshed their vows not to smoke in this year's Baisakhi baptism. The Sikh leaders have taken a strong position against tobacco and have banned its sale around the Golden Temple in Amritsar.

If the World Health Organization's framework convention on tobacco control treaty and its application is handed to the many Indian religious groups, then, like the Amrit ceremony in Punjab, they could tackle the consumption pattern of paan masala, tobacco, smoking, and alcohol among household members aged 15 years and above were collected. However, no direct interviews were conducted of the adult men in the household (the information was collected by the women interviewed). In view of the above, under-reporting is a strong possibility as the women interviewed might not be aware of the consumption of tobacco outside the household. Also, because of the social stigma attached with the consumption of tobacco women might be under-reporting to the interviewers.

Hence this study may not be a true reflection of current consumption of tobacco among the adult men in India.

To our knowledge it is, however, the best data set available on the prevalence of consumption of paan masala, tobacco, smoking, and alcohol in the country.

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Competing interests: JA is managing editor of BMJ West Africa edition and trustee-director of the Nigerian Medical Forum, a UK registered charity, both of which have keen interest in seeing to improvements in healthcare planning and delivery in West Africa since 1991. Neither position attracts a salary, but his travel expenses are often partly refunded.

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Competing interests: None declared.

Patterns and distribution of tobacco consumption in India

Unadjusted prevalence of adults aged 18 and above who smoke or chew tobacco in 1988-9 by Indian state

The second national family health survey collected data from more than 90 000 ever married women aged 15-49 years in India, covering all states. The data


2 Smith R. Editor's choice: Towards a global social contract. BMJ 2004;329:3. (3 April.)

3 Ana J. The role of a general medical journal. BMJ 2004;328:591. (6 March.)

4 Smith R. Editor's choice. Towards a global social contract. BMJ 2004;329:3. (3 April.)

5 Management and distribution of tobacco consumption in India

Burden of non-communicable diseases in South Asia

Evidence for epidemic of coronary heart disease in India is weak

Editor—India is widely believed to be on the verge of an epidemic of coronary heart disease, as expressed by Ghaffar et al in their clinical review.1 We believe this assumption to be based on weak evidence.

We found one meta-analysis, reporting a ninefold increase in urban India (1-9%) and twofold increase (2-4%) in rural India between the 1960s and 1990s.2 We believe these results to be inaccurate because of the poor quality of underlying data and because comparisons were based on studies defining coronary heart disease differently. Coronary heart disease was measured by using either Minnesota coded electrocardiograms or clinically defined using non-validated translations of the Rose angina questionnaire. The questionnaire tends to give greater positive results and is less valid in women and South Asian populations.3-5

Our review, which is currently undergoing peer review, focused on Minnesota coded electrocardiograms to provide an objective measure. We reviewed 31 studies published between 1974 and 2002.

The quality of the data was generally poor as many did not fulfil basic criteria for epidemiological research. Furthermore, research was generally concentrated on a small area around the capital, Delhi. We found the prevalence in urban India to be higher than rural areas in men and women. We found no clear rise in prevalence, including age specific rates, in men over a 27 year period, with some modest evidence of a rise in women.

A major expansion of research and surveillance is urgently needed, with new studies following more rigorous and standardised methods to permit comparison over time, between locations, and between and within populations. Only then will the true extent and impact of the disease in South Asia be known. In the meantime, claims of a massive epidemic need to be interpreted with caution.

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Competing interests: None declared.


Authors’ reply

Editor—Ahmad and Bhopal’s concern about the inadequate data available to document a rise in the prevalence of coronary heart disease in India is justified. This reinforces our own expressed concerns about inadequate data from South Asia on non-communicable disease related burdens and their trends.

Despite the fact that there are methodological weaknesses in the meta-analysis published by Gupta et al,2 several types of data indicate a rising burden of coronary heart disease in India. Recent epidemiological surveys show a high urban prevalence of 11%,3 consistent with earlier reports.4 Rural surveys have been inadequate and nationally representative surveys, using standardised methods, are unavailable.

Unpublished data from a multicentre study of men aged 35-59 years, conducted on behalf of the Indian Council of Medical Research during 1990-4, showed rising prevalence rates of coronary heart disease with increasing urbanisation (rural Vellore 3.15 per 1000 male population; rural Haryana 4.48/1000; urban Vellore 5.92/1000; and urban Delhi 8.72/1000 male population). Tertiary care centres have documented a steep rise in the proportion of admissions for coronary heart disease.5

Although each of these datasets has several sources of bias, the direction of change consistently points to an increase in coronary heart disease burdens, however defined. A clear need exists to develop better systems for accurately measuring and clearly documenting the epidemiological transition that is under way in India.

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Competing interests: None declared.


Hit for six

**BMJ** needs to decide whether it is a journal or magazine

**Editor**—It is surprising that an article such as the analysis of test matches between India and Pakistan by Abbasi and Khan is published in a reputed journal.1 The **BMJ** likes to remind its readers time and again about the lack of publication space, and I believe many good articles (pertaining to medicine) are turned down for this reason.

There is a difference between a medical journal and a magazine. Otherwise you could appoint Sir Geoffrey Boycott as one of the editors of the **BMJ**.

I think that the **BMJ** is taking its readers for a ride—or perhaps hitting them for six.

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Competition interests: None declared.

Miandad's six is metaphor for chaos and complexity

**Editor**—Miandad's six, as analysed by Abbasi and Khan in their short report,1 is a metaphor that takes us beyond the boundary to new thinking. It is similar to the butterfly metaphor of chaos and complexity science: “A butterfly flapping its wings in Texas causes a tornado in Texas.” This six caused ripples across time and space.

C L R James, whose words, “What do they know of cricket who only cricket know?” were paraphrased in the opening sentence of the article, argued in his book *Beyond a Boundary* that cricket is an art whose structure allows variety and that it relates to history and society.2

Cricket is a game of complexity, with non-linear and dynamic interactions of the weather, ground conditions, selection policies (which were mentioned by the authors), and many other factors determining outcomes. In such systems, chaos rears its head, making plausible the hypothesis mentioned by Abbasi and Khan, that a single shot had an enduring influence.

Publication of this article has been dismissed by some on bmj.com as “not cricket,” yet it may have the same effect as Miandad's six in creating change, bringing to the attention of readers concepts of simplicity and complexity which underlie all of medicine and health, and all of life itself. It may thus still become a landmark article, which may bowl us over, going beyond the boundary.

Such concepts have been previously described in relation to the South Asian community, with chaos and complexity being used as a tool for a change in health promotion.4 Cricket has been used as a tool for change in health, with cricket scores and history used to stimulate interest at a South Asian heart health fair in Toronto in 1995.5 The idea of Miandad's six leading to change is therefore not as far fetched as it may sound.

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Competition interests: None declared.

**Summary of rapid responses**

Abbasi and Khan's analysis of the effects of Pakistan batsman Javed Miandad's dramatic match-winning six off the last ball in a one day match that his side had looked like losing to India until that delivery, resulted in an unusually high number of responses.1 Most of the more than 70 correspondents were united that the paper was entirely misplaced in a medical journal and should have encountered the same fate as most other submitted manuscripts.

Some even argued that it showed “laddishness” at the **BMJ**. Others additionally criticised the chosen statistical analysis as unsuitable or pointed out the lack of confounders.

Cricket fans engaged in mostly humorous, but none the less detailed, descriptions and discussions about the various merits of India's and Pakistan's teams, the achievements of individual players, and the potentially tremendous benefits of various kinds of large scale sporting events for the health (or psyche) of a nation.

Birte Twisselmann technical editor **BMJ**

Competition interests: BT grew up in Germany, a country not known for its cricketing talent. She therefore has not a clue what most correspondents are talking about but remains fascinated by the terminology.

1 Abbasi K, Khan KS. India versus Pakistan and the power of a six: an analysis of cricket results. BMJ 2004;328:800. (3 April)


4 Rambihar VS. South Asian heart: preventing heart disease: from the heart to the edge of the diaspora: from the heart to the edge of chaos. Toronto: Vashna Publications, 2002.

1 Abbasi K, Khan KS. India versus Pakistan and the power of a six: an analysis of cricket results. BMJ 2004;328:800. (3 April)

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